



DoD Instruction 5000.02

8 December 2008

**Operation of the Defense Acquisition System
Statutory and Regulatory Changes
(including policy impacts from DTM 09-007, Implementation
of the Weapons System Acquisition Reform Act of 2009)**

**Bradford Brown
Director for Acquisition
& Program
management**

DoDI 5000.02, December 2008

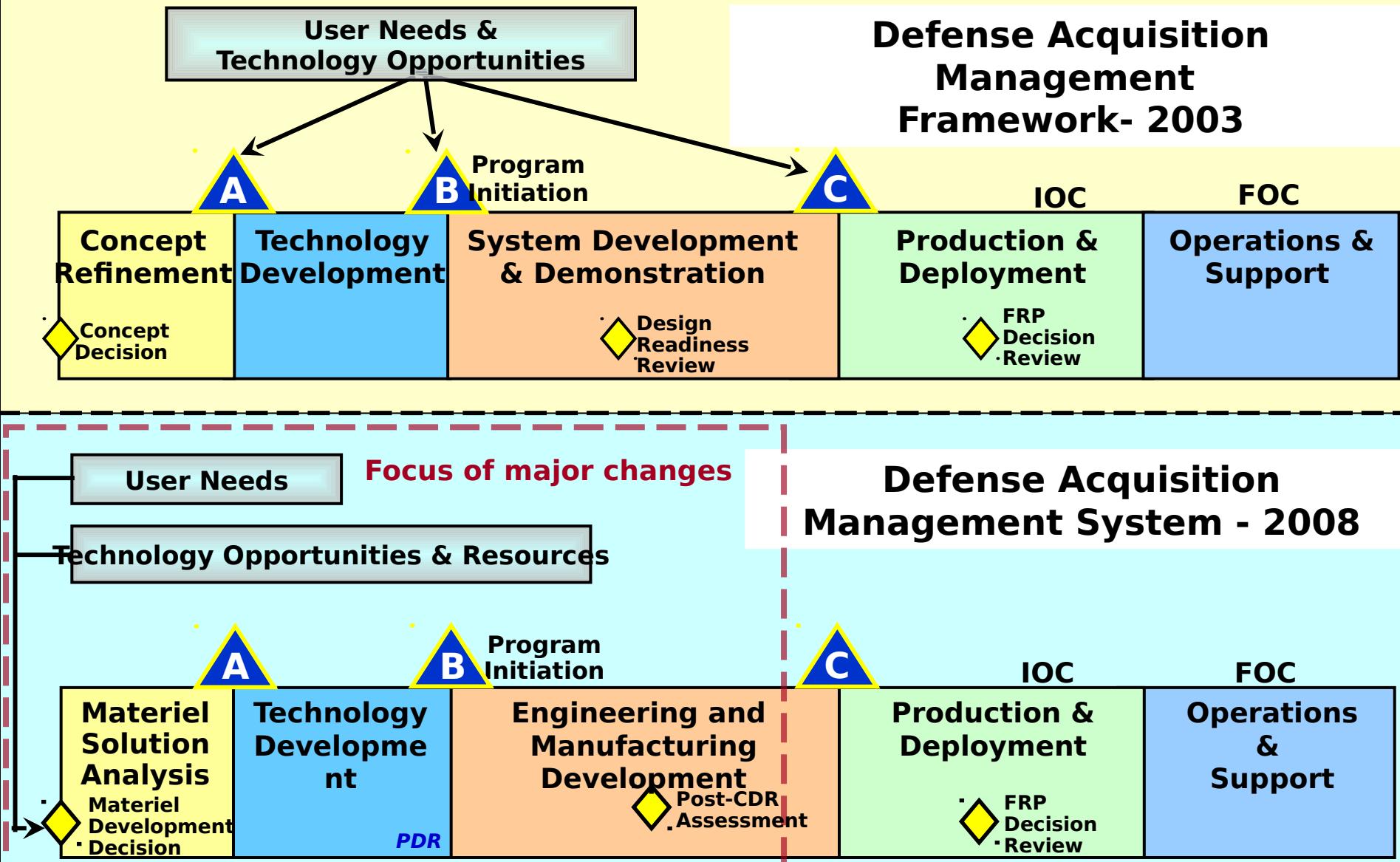
Topics:

- **DoDI 5000.2: 2003 vs. 2008**
- **New Policy Directed by Congress**
- **New or Revised Regulatory Policy**
- **Statutory & Regulatory Information & Milestone Requirements**
- **New/Revised Enclosures to DoDI 5000.02**
- **The Defense Acquisition Management System - Milestones, Phases and Key Activities**

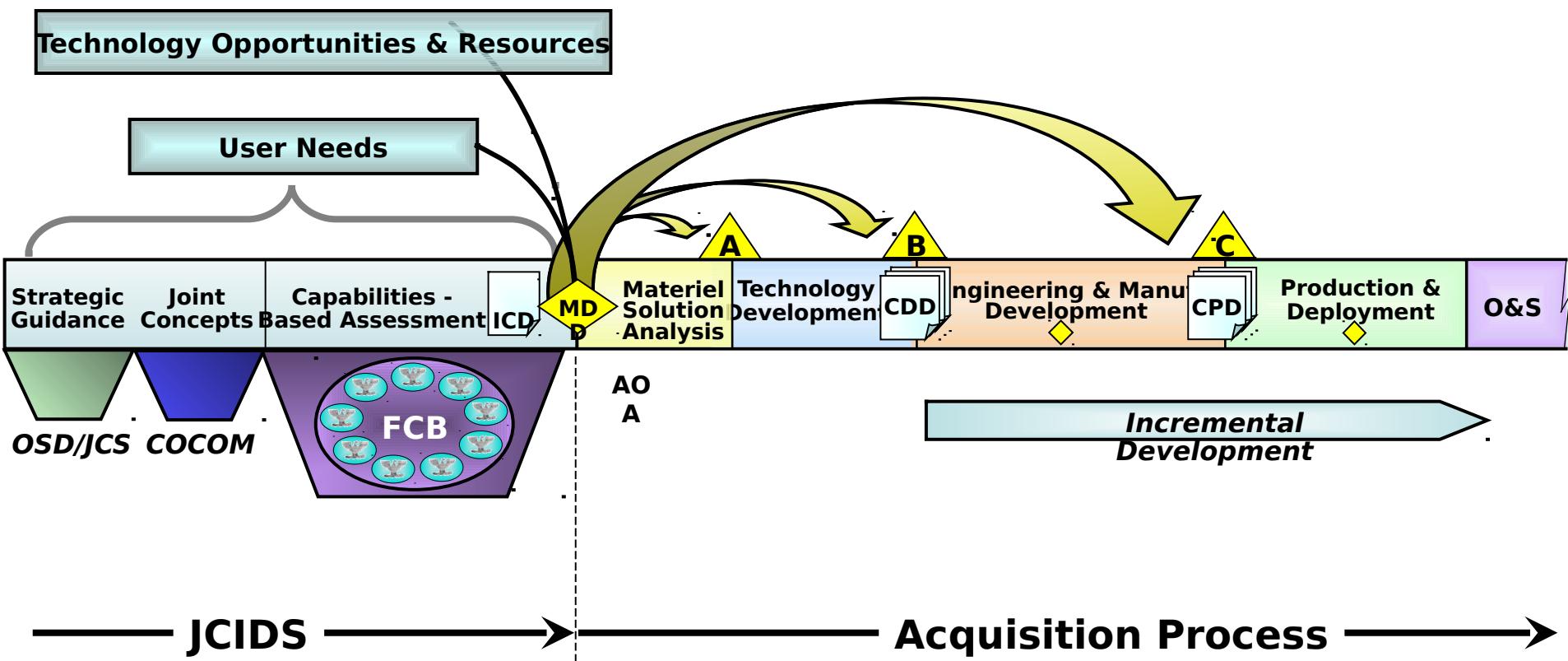
Changes to the May 2003 DoDI 5000.02

- **Policy Flowing from Numerous New/Revised sections of Public Law since 2003 (some with Multiple Requirements)**
- **Approved Policy Appearing in over 25 Policy Memos and DoD Responses to the GAO, IG, and Congress**
- **Reference to 10 Updated or Newly Issued DoD Publications**
- **Consideration of Over 700 Defense Acquisition Policy Working Group (DAPWG) Comments**

Comparison of 2003 vs. 2008

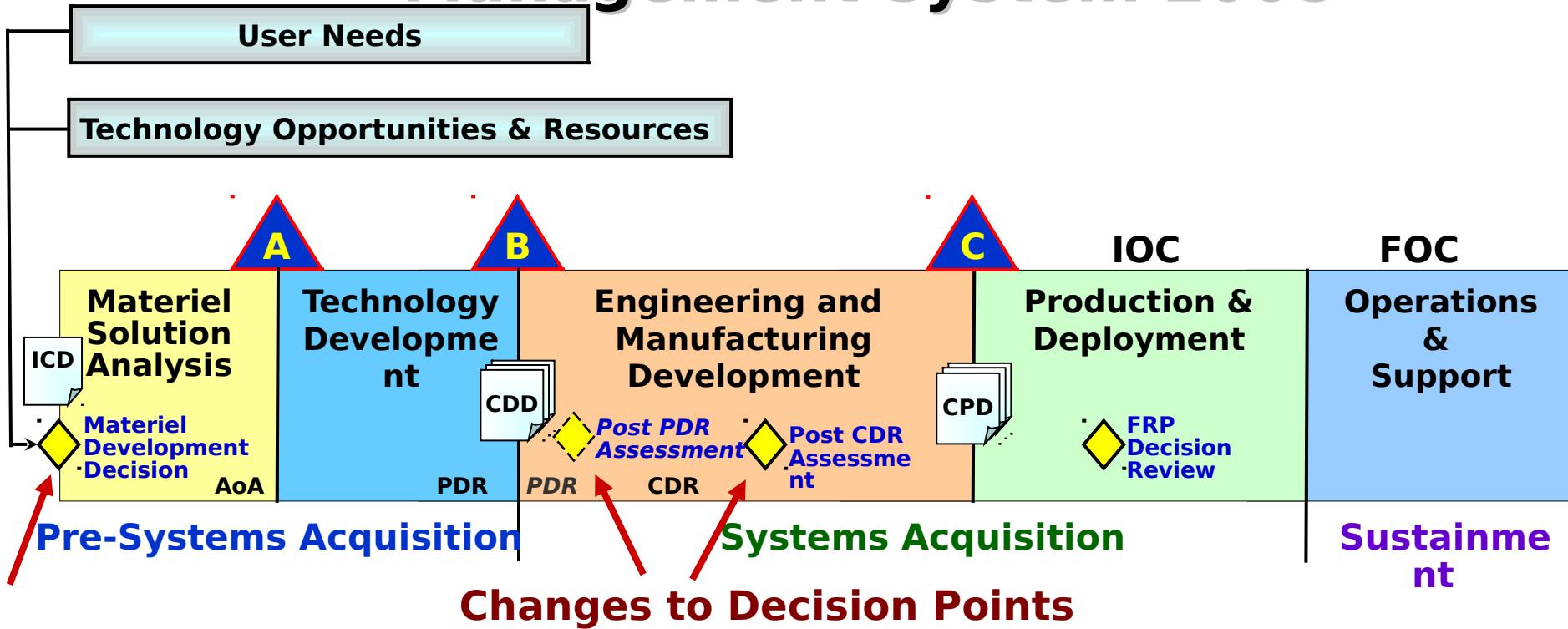


The Defense Acquisition Management System 2008



“Following the Materiel Development Decision (MDD), the MDA may authorize entry into the acquisition management system at any point consistent with phase-specific entrance criteria and statutory requirements.”

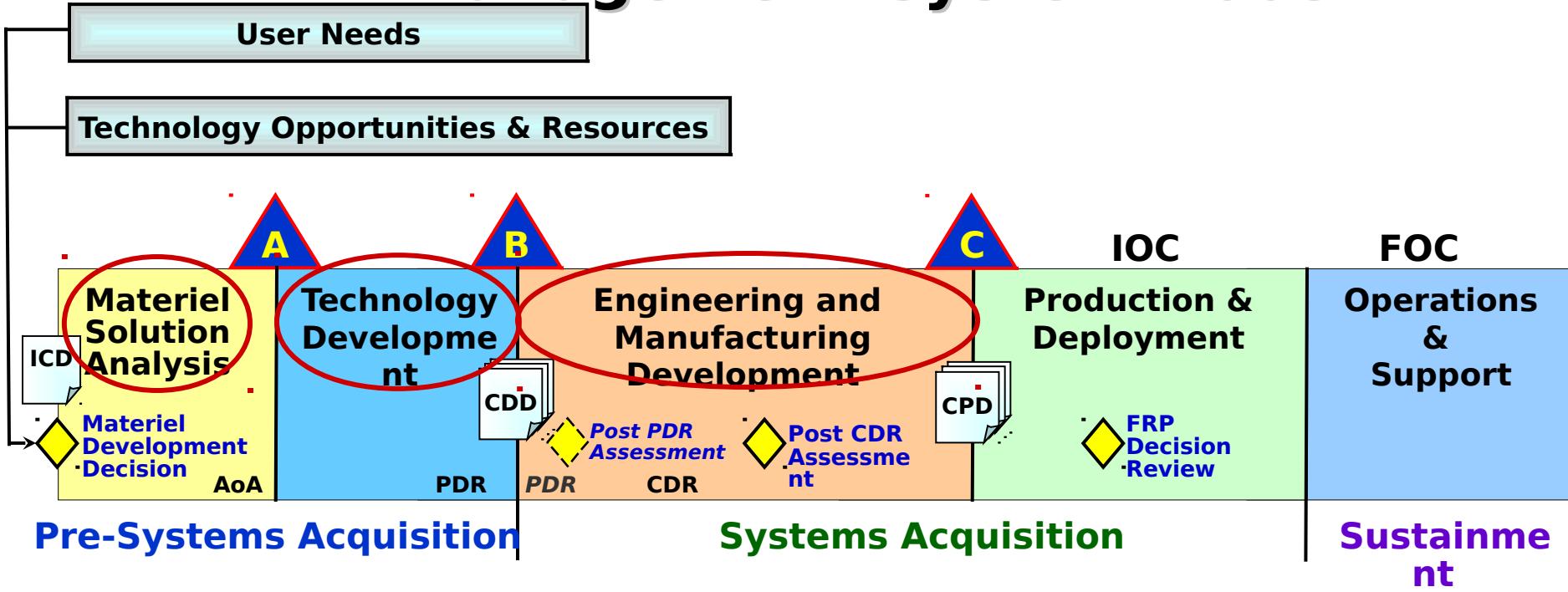
The Defense Acquisition Management System 2008



Old (2003)	New (2008/2009)	Change from 2003
Concept Decision (CD)	Materiel Development Decision (MDD)	MDD required prior to entering process at any point
N/A	MDAPs require PDR prior to MS B & Post-PDR Assessment at MS B.* Non-MDAPs may have PDR & Post-PDR	MDA's assessment of PM's PDR Report
Design Readiness Review (DRR)	Assessment after MS B Post CDR Assessment	MDA's assessment of PM's CDR Report

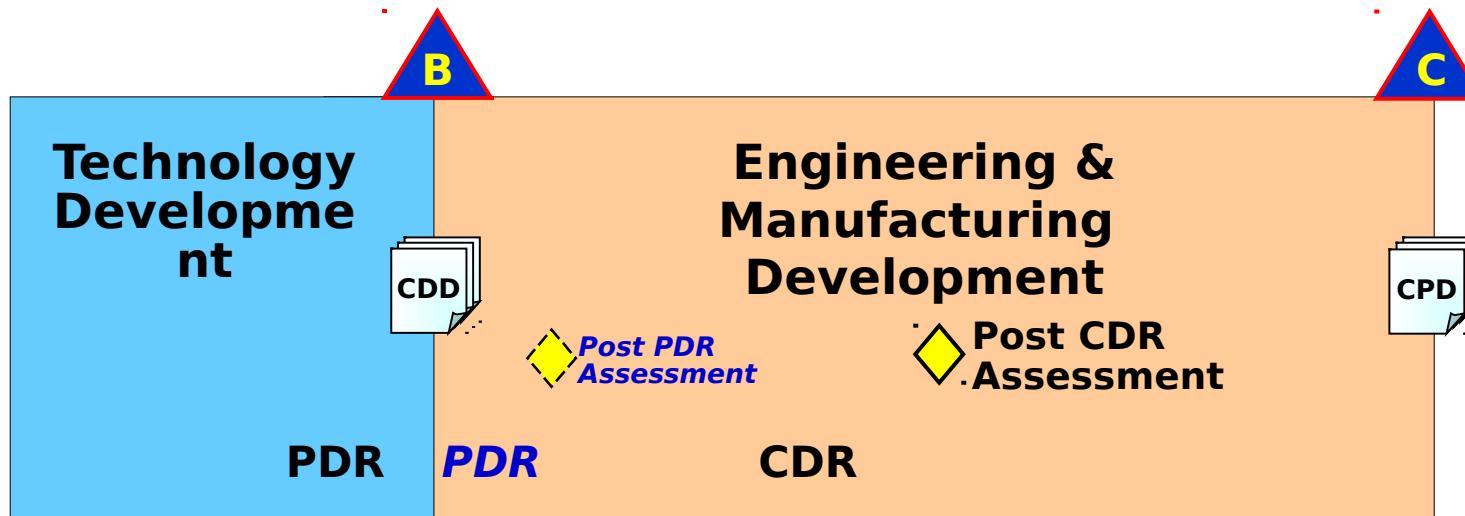
*WSARA requires PDR before MS B for MDAPS

The Defense Acquisition Management System 2008



The Defense Acquisition Management System 2008

Preliminary Design Review

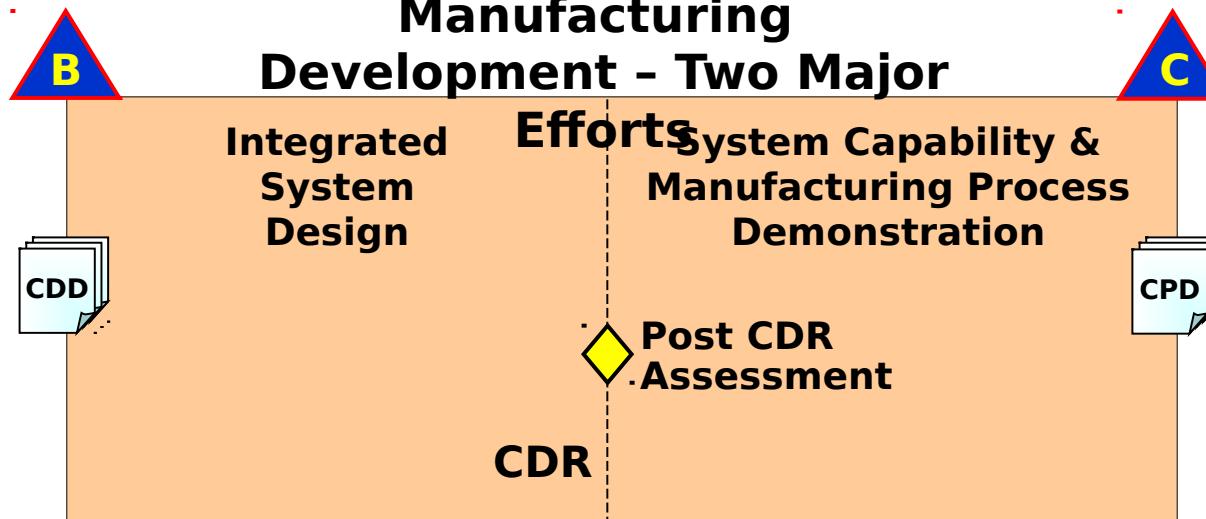


PDR Before Milestone B (MDAPs)	PDR After Milestone B (non-MDAPs)
<ul style="list-style-type: none"> Planned for in Technology Development Strategy PDR Report provided to MDA at MS B Includes recommended requirements trades 	<ul style="list-style-type: none"> Planned for in Acquisition Strategy PDR Report provided to MDA prior to Post PDR Assessment Reflects requirements trades At Post PDR Assessment, MDA considers PDR report; determines action(s) required to achieve APB objectives and issues ADM

The Defense Acquisition Management System 2008

Engineering & Manufacturing

Development - Two Major



Old (2003)	New (2008)	Change from 2003
System Design	Integrated System Design	Establishment of Product Baseline for all Configuration Items
System Demonstration	System Capability & Manufacturing Process Demonstration	Manufacturing processes effectively demonstrated; production-representative article(s) demonstrated in intended environment; T&E assesses improvements to mission capability and operational support based on user needs.

- **Military Equipment Valuation (accounting for military equipment)**
- **MDA Certification at Milestones A & B**
- **Cost type contract for EMD Phase requires written determination by MDA**
- **Lead Systems Integrator Restrictions**
- **Replaced System Sustainment Plan**
- **Configuration Steering Boards (CSBs)**

- **New MAIS Reporting Requirements**
- **“Time-Certain” IT Business Systems Development**
- **Defense Business Systems Oversight**
- **MDA assessment of compliance with chemical, biological, radiological, and nuclear survivability (CBRN) requirements at Milestones B and C**
- **Data Management Strategy**

- **Detailed Acquisition of Services Policy**
- **Independent management reviews (Peer Reviews) for supplies and services contracts**
- **Interim Beyond LRIP Report**
- **DOT&E's Role in Testing Force Protection Equipment / Non-Lethal Weapons**
- **Nunn-McCurdy breach / APB Revision Procedure**
- **Cost of energy in AoA and resource estimate**

Weapon Systems Acquisition Reform Act (WSARA) of 2009

- Signed by President May 22, 2009 (Public Law 111-23)
- Established requirements that directly impact operation of the Defense Acquisition System and duties of key officials
- Directive-Type Memorandum (DTM) 09-127, 4 Dec 2009, Implements WSARA
- DTM is effective immediately and will be incorporated into DoDI 5000.2, the Defense

WSARA DTM is available at <http://www.ditic.mil/whs/directives> (DFARS) and the Defense Acquisition Guidebook within 180 days.

Weapon Systems Acquisition Reform Act (WSARA) of 2009

Analysis of Alternatives Study Guidance

- 2. Acquisition Strategies to Ensure Competition**
- 3. Competition and Considerations for the Operation and Sustainment (O & S) of Major Weapon Systems**
- 4. Competitive Prototyping**
- 5. Cost Estimation**
- 6. Developmental Test and Evaluation (DT&E)**
- 7. Systems Engineering**
- 8. Performance Assessments and Root Cause Analysis (PARCA)**
- 9. Assessment of MDAP Technologies**

Most apply to MDAPs (ACAT I); some apply to MAIS (ACAT IA); some apply only to MDAPs/MAIS for which USD(AT&L) is MDA (ACAT ID/IAM); some apply to Major Weapon Systems (ACAT II); some apply to all

RDT presentations on WSARA and the DTM implementing WSARA are available from the DAU Center for Acquisition and Program Management.

New or Revised Regulatory Policy

- **Detailed Systems Engineering Policy**
- **Program Support Reviews (PSRs)**
- **Integrated Developmental and Operational Test & Evaluation**
- **Restricted use of performance requirements that do not support KPPs**
- **Comparison with current mission capabilities during OT&E**
- **Assessment of Operational Test Readiness (AOTR)**
- **Contract Incentives Strategy**
- **Life-Cycle Sustainment Plan (LCSP)**

New or Revised Regulatory Policy

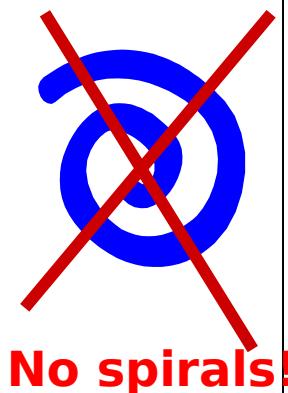
Continued...

- Contracting for Operational Support Services
- Approval of Technology Development Strategy prior to Release of final RFP for Technology Development Phase
- Approval of Acquisition Strategy prior to release of final RFP for EMD or any succeeding phase.
- Reliability, Availability, and Maintainability (RAM) strategy
- Review and Assessment of New or Modified Communications Waveforms.
- Evolutionary Acquisition Revised

Evolutionary Acquisition

From two processes...

- Incremental Development: End-state is known; requirements met over time in several increments
- Spiral Development: End-state is not known; requirements for increments dependent upon technology maturation and user feedback.



To one process...

- Capability delivered in increments, recognizing up front need for future capability improvements
- Each increment:
 - depends on mature technology
 - is a militarily useful and supportable operational capability
 - Successive Technology Development Phases may be needed to mature technology for multiple increments

Enclosures to DoDI 5000.02

1 References

2 *Procedures*

3 ACAT and MDA

4 Statutory and Regulatory Information and Milestone Requirements

Tables
Updated

Table 5. EVM Implementation Policy

Table 6. APB Policy

Table 7. Unique Decision Forums

5 IT Considerations

6 Integrated T&E

7 Resource Estimation

8 Human Systems Integration

9 Acquisition of Services

10 Program Management

11 Management of Defense Business Systems

12 Systems Engineering

Enclosure 4, Table 2-1

Statutory Requirements Added For MDAPs & MAIS

Requirement	Reference	When Required	Comment
Analysis of Alternatives (AoA)*	10 USC 2366a Title 40, Sec III	MS A, B C Pgm Initiation for Ships	Updated as necessary at MS B and C
Data Management Strategy	10 USC 2320	MS A, B, C &	Part of TDS or Acq
Military Equipment Program Valuation	PL 101-576 & Statement of Federal Financial Accounting Standards, No 6.	FRPDR MS C & FRPDR (or Equiv)	Strategy Part of Acq Strategy

*WSARA requires Director, Cost Assessment and Program Evaluation (DCAPE) (new position replaces Dir, PA&E) to develop AoA study guidance for joint requirements for which the JROC is validation authority. MDA attaches the study guidance to the Materiel Development Decision ADM.

Enclosure 4, Table 2-1

Statutory Requirements Added For MDAPs Only

Requirement	Reference	When Required	Comment
MDA Program Certification	10 USC 2366 a & b	MS A & B MS C (if program initiation)	Requires cost est. at MS A
Nunn-McCurdy Assessment & Certification	10 USC 2433	When Service Secretary reports an increase in cost that equals or exceeds the critical cost threshold	increase of 25% over "current" PAUC or APUC APB values. Increase of 50% over "original" PAUC or APUC APB values
Replaced System Sustainment Plan	10 USC 2437	MS B	APB values Program initiation for ships

Enclosure 4, Table 2-1

Statutory Requirements Added For MAIS Only

Requirement	Reference	When Required	Comment
Assessment & certification of a critical change to the Defense Committees	10 USC 2445c	NLT 60 days after receiving a MAIS Quarterly Report indicating a critical program change	Failed to achieve IOC w/in 5 yrs after funds were first obligated; schedule change of 1 yr or more; incr in dev cost or life cycle cost of 25% or more; or a change in expected performance that undermines ability of sys to perform anticipated functions
Notification of a significant change to the Defense Committees	10 USC 2445c	NLT 45 days after receiving MAIS Quarterly Report indicating a significant change	Schedule change of more than 6 mos, but less than 1 yr; incr in development cost or life cycle cost of at least 15%, but less than 25%; or significant adverse change in expected performance or equiv to Full Deploy DR
DoD CIO Confirmation of CCA	Sec 811, PL 106-398	MS A, B, C, Full Deployment DR	MSC if pgm initiation or equiv to Full Deploy DR

Enclosure 4, Table 2-1

Authority Requirements Added For MAIS Only, continued.

Requirement	Reference	When Required	Comment
DBSMC Certification for Business Systems	10 USC 2222	Prior to obligation of funds	See Encl. 11, DoDI 5000.02
Modernization Notice of MAIS Cancellation or significant reduction in Scope	Sec 806, PL 109-163	60 Days prior to MDA decision to cancel or significantly reduce scope of fielded or post MS C MAIS	
MAIS Annual Report to Congress	10 USC 2445b	Annually, after first occurrence of any of the following events: MDA designation, MS A, or MS BD	Due 45 days after the President's Budget is submitted to Congress
MAIS Quarterly Report	10 USC 2445c	Quarterly following initial submission of a MAIS Annual Report	

Enclosure 4, Table 2-2

Statutory Requirements Added For ACAT II and Below Programs (unless otherwise noted)

Requirement	Reference	When Required	Comment
Analysis of Alternatives (AoA) - all IT including	40 USC Subtitle III	MS A, B & C	Updated as necessary at MS B and C
NSS Data Management Strategy (ACAT II only)	10 USC 2320	MS B, C & FRPDR	Part of Acq Strategy
LRIP Quantities (ACAT II only)	10 USC 2400	MS B	
Military Equipment Program Valuation	PL 101-576 & Statement of Federal Financial Accounting Standards, No 6.	MS C & FRPDR (or Equiv)	Part of Acq Strategy

Enclosure 4, Table 3

Regulatory Requirements Added/Revised For All Programs

Requirement	Reference	When Required	Comment
Acquisition Info Assurance Strategy	DoDI 8580.1	MS A, B, C & FRPDR or	All IT, Including NSS
Analysis of Alternatives (AoA)	DoDI 5000.02	MS A, B, & C Full Deployment DR for AIS	Updated as necessary at MS B and
AoA Study Guidance	DoDI 5000.02	MDD	C
Component Cost Estimate	DoDI 5000.02	MDAP: MS B & FRPDR MAIS: whenever EA is	Mandatory for MAIS; optional for
Corrosion Prevention Control Plan	DoDI 5000.02	MS B & C	MDAP Part of Acq Strategy ACAT I only
Life Cycle Sustainment Plan	DoDI 5000.02	MS B, C & FRPDR	Part of Acq Strategy
Life Cycle Signature Support Plan	DoDD 5250.01	MS A, B, & C	

Enclosure 4, Table 3

Regulatory Requirements Added/Revised For All Programs

Requirement	Reference	When Required	Comment
Preliminary Design Review (PDR) Report*	DoDI 5000.02	MS B	Requires a Post-PDR Assessment
Post Critical Design Review (CDR) Report	DoDI 5000.02	Post-CDR Assessment	
Net-Centric Data Strategy	DoDD 8320.02	MS A, B, C	
Systems Engineering Plan (SEP)	DoDI 5000.02	MS A, B, & C	
IID Implementation Plan	DoDI 5000.02	MS B & C	

*PDR and PDR Report are mandatory prior to MS B for MDAPS (WSARA) - included in the MS B program certification to Congress (10 USC 2366b). For non-MDAPs, if conducted after MS B, requires a formal Post-PDR decision point scheduled in the acquisition strategy.

Enclosure 4, Table 3

Regulatory Requirements Added/Revised For All Programs

Requirement	(unless otherwise noted) Reference	W&R Required	Comment
Program Deviation Report	DoDI 5000.02	Immediately upon a program deviation	APB breaches
System Threat Assessment Report (STAR)	DoDI 5000.02 DoDD 5105.21 DIA Dir. 5000.200	MS B & C	ACAT I & IA, & all DOT&E Oversight List Programs
Systems Threat Assessment (STA)	DoDI 5000.02 DoDD 5105.21 DIA Dir. 5000.200	MS B & C	ACAT II
Spectrum Supportability Determination	DoDD 51650.1 5000.002	MS B & C	
Test & Evaluation Strategy (TES)	DoDI 5000.02	MS A	

- “Title 40/CCA” replaces term CCA. Subtitle III of Title 40, US Code was formerly known as Division E of Clinger-Cohen Act
- Table 8 slightly modified for readability
- Added:
 - Investment Review Board (IRB) role as “OIPT” for MAIS and MDAP business systems
 - Time-Certain Acquisition of IT Business Systems (No MS A approval unless can achieve IOC within 5 years)
 - Defense Business System Management Committee (DBSMC) Certification approval for business systems with modernization funding over \$1 million - prior to any milestone or FRP approval
 - DoD CIO notification to Congress 60 days before any MDA cancels or significantly reduces size of MAIS fielded or has received MS C approval
- Revised: Requirement for DoD CIO certification of CCA compliance eliminated.

- **PM, in concert with user and test community, must provide safety releases to developmental and operational testers prior to any test using personnel**
- **Systems that provide capabilities for joint missions must be tested in joint operational environment**
- **Embedded instrumentation must be developed to facilitate training, logistics support and combat data collection**
- **Joint Interoperability Test Command (JITC), “regardless of ACAT” will provide interoperability test certification memoranda to J-6**
- **At test readiness reviews, PM must ensure impact of all deviations and waivers is**

Encl 6, Test & Evaluation, changes Continued

- **OUSD(AT&L), Dir Systems Engineering* will conduct an independent Assessment of Operational Test Readiness (AOTR) for ACAT ID and special interest programs designated by USD(AT&L). CAE will consider AOTR prior to making determination of materiel readiness for IOT&E**
- **OSD T&E Oversight List categories: developmental testing, operational testing or live fire testing. Programs on list designated for OT or live fire testing will be considered same as MDAPs or covered programs and subject to all provisions of Title 10, US Code and DoDI 5000.02**
- **Force protection equipment (including non-lethal weapons) will be identified as a separate category on OSD T&E Oversight List**

*WSARA established Dir. SE under DDR&E

Encl 7, Resource Estimation, changes

- PMs must use Cost and Software Data Reporting System to report data on contractor costs and resource usage
- CARD must reflect program definition achieved during TD phase, be in sync with other program documents, and if PDR is before MS B, the final CARD at MS B must reflect results of the PDR.
- Fully burdened cost of delivered energy must be used in trade-off analysis for all tactical systems with end items that create a demand for energy
- Following areas of assessment added to AoA:
 - Alternative ways to improve the energy efficiency of DoD tactical systems consistent with mission and cost effectiveness
 - Appropriate system training to ensure that training is provided with the system

- **Mix of military, DoD civilian, and contractor support to operate, maintain and support (including training) system must be determined based on Manpower Mix Criteria and reported in Manpower Estimate**
- **Economic analyses to support workforce mix decisions must use tools that account for all variable and fixed costs, compensation and non-compensation costs, current and deferred benefits, cash and in-kind benefits**
- **Details on Environment, Safety and Occupational Health (ESOH) moved to new encl 12, Systems Engineering**

Encl 9, Acquisition of Services, changes

- **Planning for acquisition of services must consider:**
 - Requirements development and management
 - Acquisition planning
 - Solicitation and contract award
 - Risk management
 - Contract tracking and oversight
 - Performance evaluation
- **Special procedures for IT services that cost over \$500M, all services that cost over \$1B, and special interest programs designated by ASD(NII), USD(AT&L) or their designees:**
 - Senior officials/decision authorities must be notified prior to issuing final solicitation (briefing or written)
 - ASD(NII)/DoD CIO notifies USD(AT&L) of any proposed acquisition of IT services over \$1B
 - Review by ASD(NII)/USD(AT&L) initiates review of acquisition strategy - final RFPs cannot be released

Encl 9, Acquisition of Services, changes Continued...

- **Policy extended to services acquired after program achieves Full Operational Capability (FOC), if those services were not subject to previous milestones**
- **Policy does not apply to R&D activities, or services that are approved part of an acquisition program managed IAW DoDI 5000.02**
- **Senior Officials and decision authorities may apply policy to R&D services at their discretion**
- **SAEs are Senior Officials for acquisition of services**
- **USD(AT&L) is Senior Official for acquisition of services for Components outside of military departments - he may delegate decision authority to commanders/ directors of these components**

Encl 9, Acquisition of Services, changes Continued...

Acquisition of Services Categories (Table)

Category	Threshold	Decision Authority
Acquisitions > \$1B	Any services acquisition with total estimated cost of \$1B	USD(AT&L) or designee
IT Acquisitions > \$500M	IT services with total estimated cost of \$500M or more	ASD(NII)/DoD CIO or as designated
Special Interest	Designated by USD(AT&L), ASD(NII)/ DoD CIO, or any Mil Dept Senior Official	designated USD(AT&L) or Senior Officials
Services Category I	Services estimated to cost \$250M or more	Senior Officials or as designated
Services Category II	Services estimated to cost \$10M or more, but less than \$250M	Senior Officials or as designated
Services Category III	Services estimated to cost more than simplified acq threshold, but less than \$10M	designated Senior Officials or as designated

All dollars in FY 2006 constant year dollars

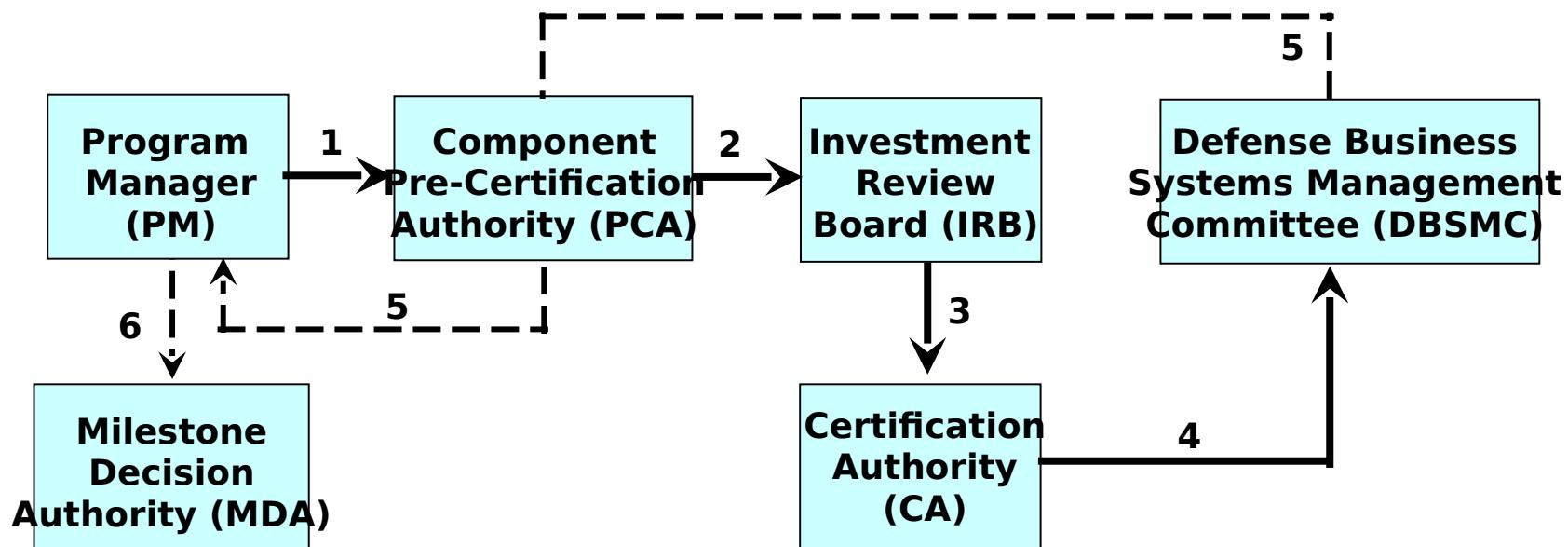
Encl 10, Program Management, changes

- **Requires PMs for ACAT II and other significant non-major programs to be assigned for not less than 3 years.**
- **Program Management Agreements (PMAs) implemented to establish “contract” between PM and acquisition and resource officials**
- **Provides that waivers for PM/PEO experience and certifications “should be strictly avoided.”**
- **Provides for USD(AT&L) waiver for PEO’s to assume other command responsibilities**
- **Adds US-ratified materiel international standardization agreements to consideration for international cooperative programs**

- **Applies to “defense business systems” modernizations with total modernization or development funding exceeding \$1 million.**
 - **Defines Defense Business System as an information system, other than a national security system, operated by, for, or on behalf of DoD, including financial management systems, mixed systems, financial data feeder systems, and IT and information assurance infrastructure.**
 - **Defense Business Systems support activities such as acquisition, financial management, logistics, strategic planning and budgeting, installations and environment, and human resource management.**

- **Funds cannot be expended until the Defense Business System Management Committee (DBSMC) approves Investment Review Board Certification (IRB) that the system:**
 - **Is in compliance with the enterprise architecture; or Is necessary to achieve a critical national security capability or address a critical requirement in an area such as safety or security; or Is necessary to prevent a significant adverse impact on a project that is needed to achieve an essential capability**

Business Systems Certification and Approval Process



1. PM completes economic viability review & other plans/analysis as requested by the PCA
2. PCA Validates info from PM, forwards certification request to appropriate IRB
3. IRB reviews request, IRB chair recommends appropriate approval authority sign certification memo and request DBSMC approval
4. CA sends signed certification memo to DBSMC for approval
5. DBSMC Chair approves certification and sends decision to the PM through the PCA.
6. PM requests MDA conduct milestone review

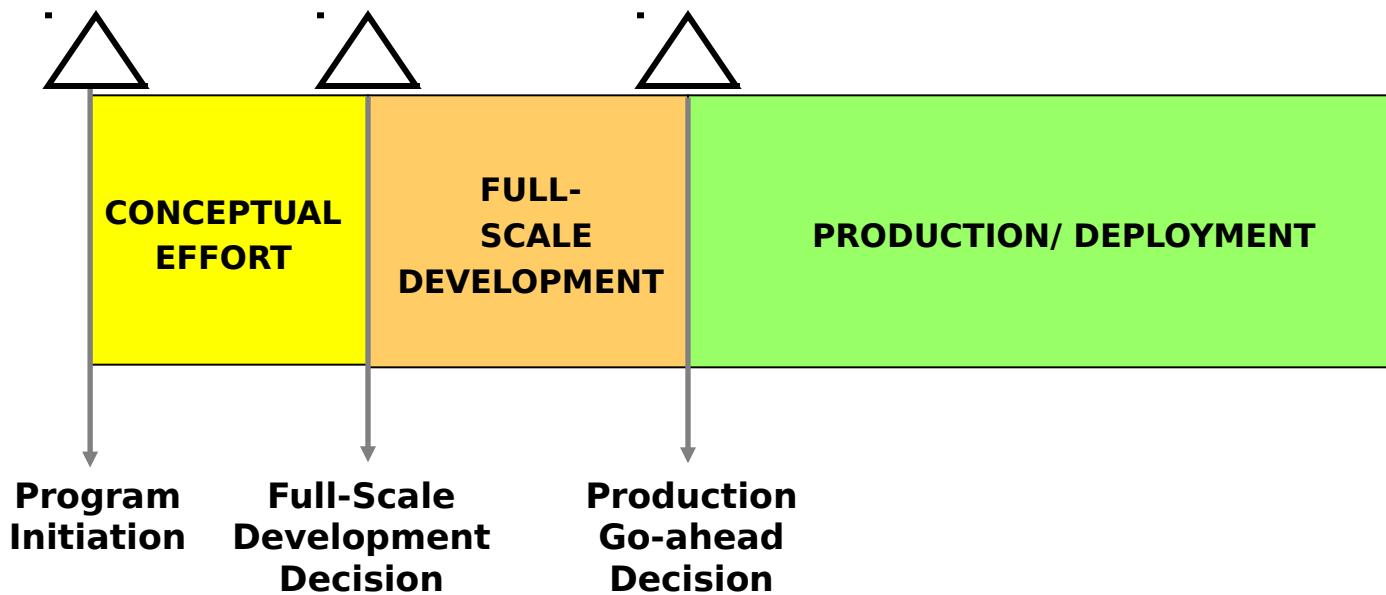
- Systems Engineering Plan (SEP) required at each milestone
- MDA is approval authority for the SEP
- For programs where USD(AT&L) is MDA, and programs on the DT-only portion of OSD T&E Oversight List, SEPs must be submitted to Director, Systems Engineering 30 days prior to DAB/ITAB review
- PEOs must have lead systems engineer - oversees SE across PEOs portfolio; reviews SEPs; assesses performance of subordinate systems engineers with PEO and PM
- Event-driven technical reviews required - with SMEs independent of program, unless waived by MDA
- Requires configuration management to establish and control product attributes and the technical baseline
- Spectrum Supportability determination required

- **ESOH risk management required to be integrated with overall SE process; Programmatic ESOH Evaluation (PESHE) required of all programs regardless of ACAT**
- **NEPA and EO 12114 (Environmental Effects Abroad of Major Federal Actions) analysis required of PM, approved by CAE**
- **Addresses PM support of Mishap Accident Investigations**
- **Requires Corrosion Prevention Control Plan for ACAT I programs at MS B and C**
- **Requires PMs to employ modular open systems approach to design**
- **Data Management Strategy (DMS) required to assess long-term technical data needs of the system - included in Acquisition Strategy**

Now for the Acquisition Management System

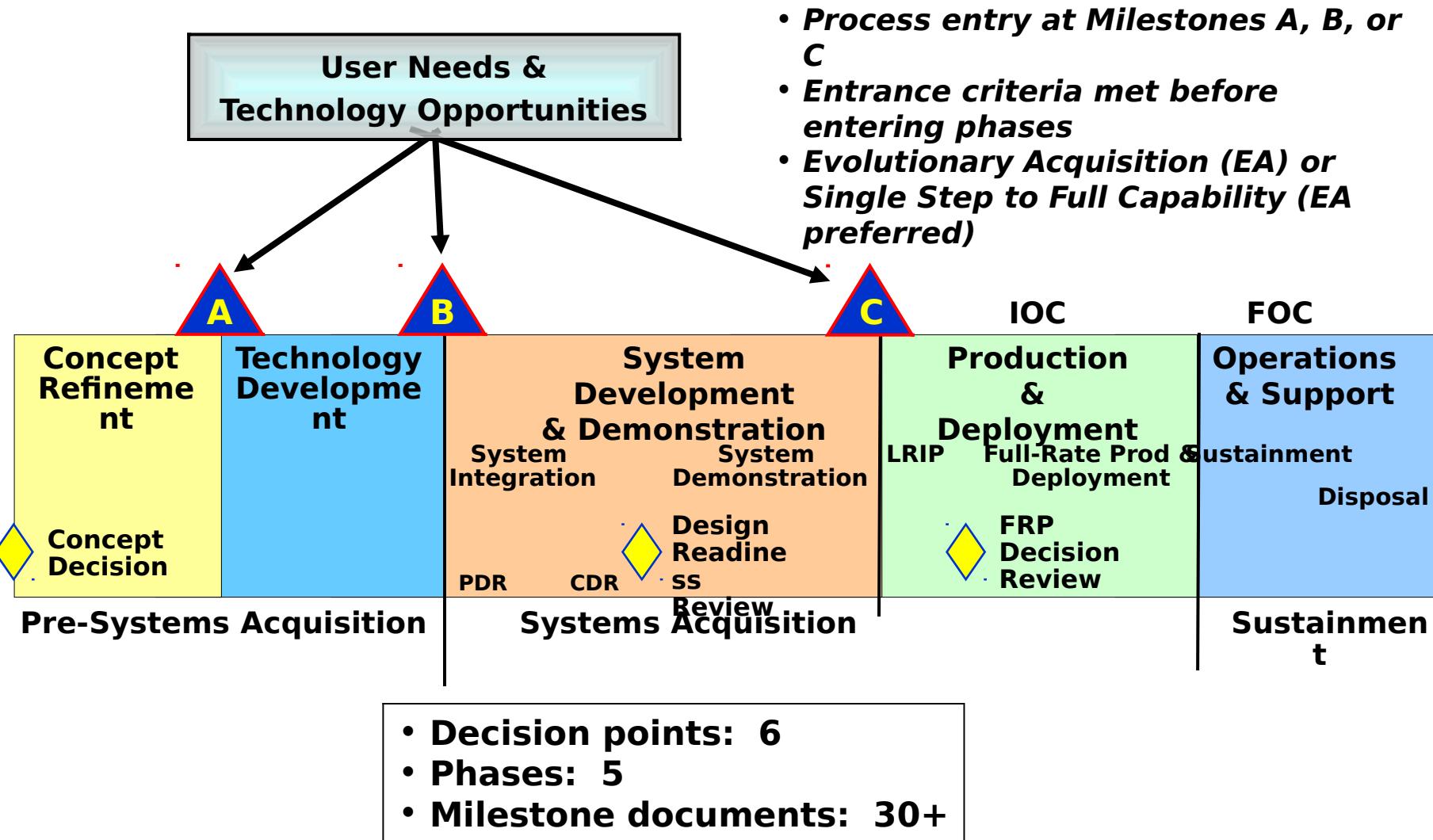
We will “walk through” the process and highlight major changes

First Acquisition Framework in 1971

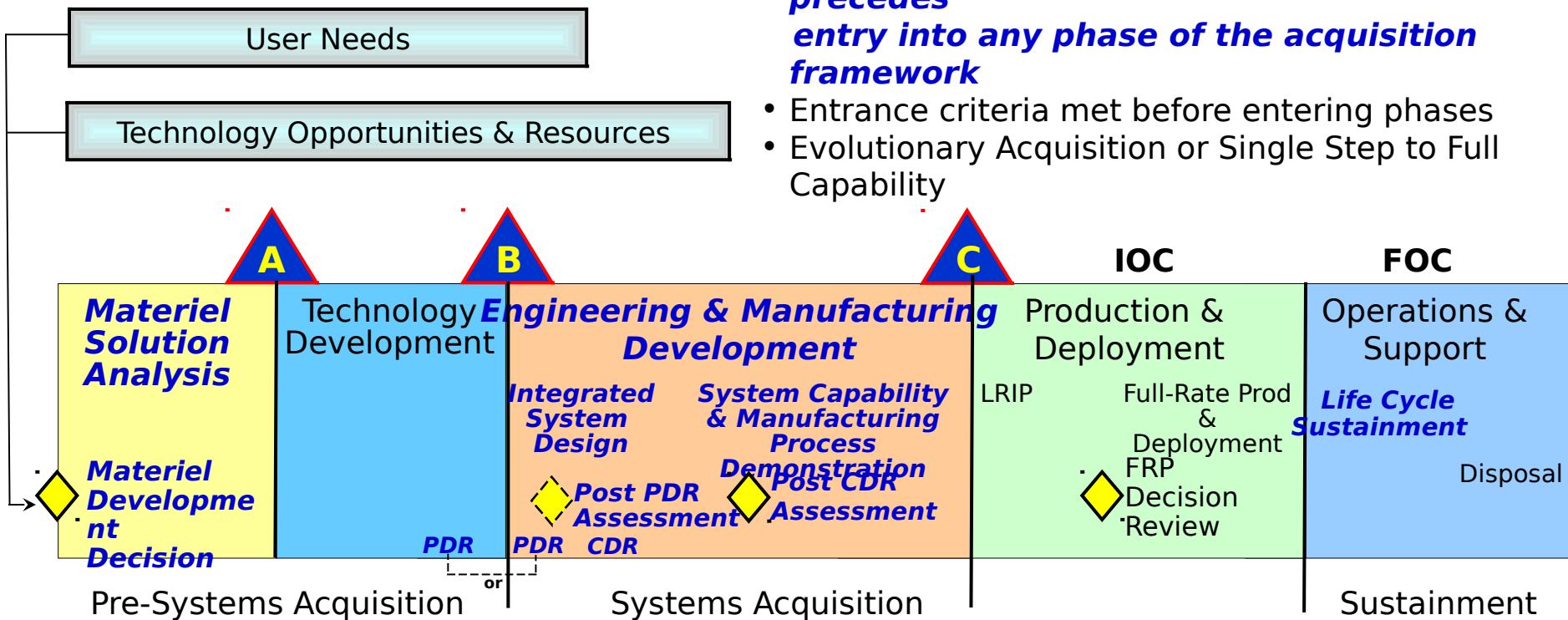


- **Decision points: 3**
- **Phases: 3**
- **Milestone documents: 1 (Decision Coordinating Paper (DCP))**

The Defense Acquisition Framework 2003



The Defense Acquisition Management System 2008

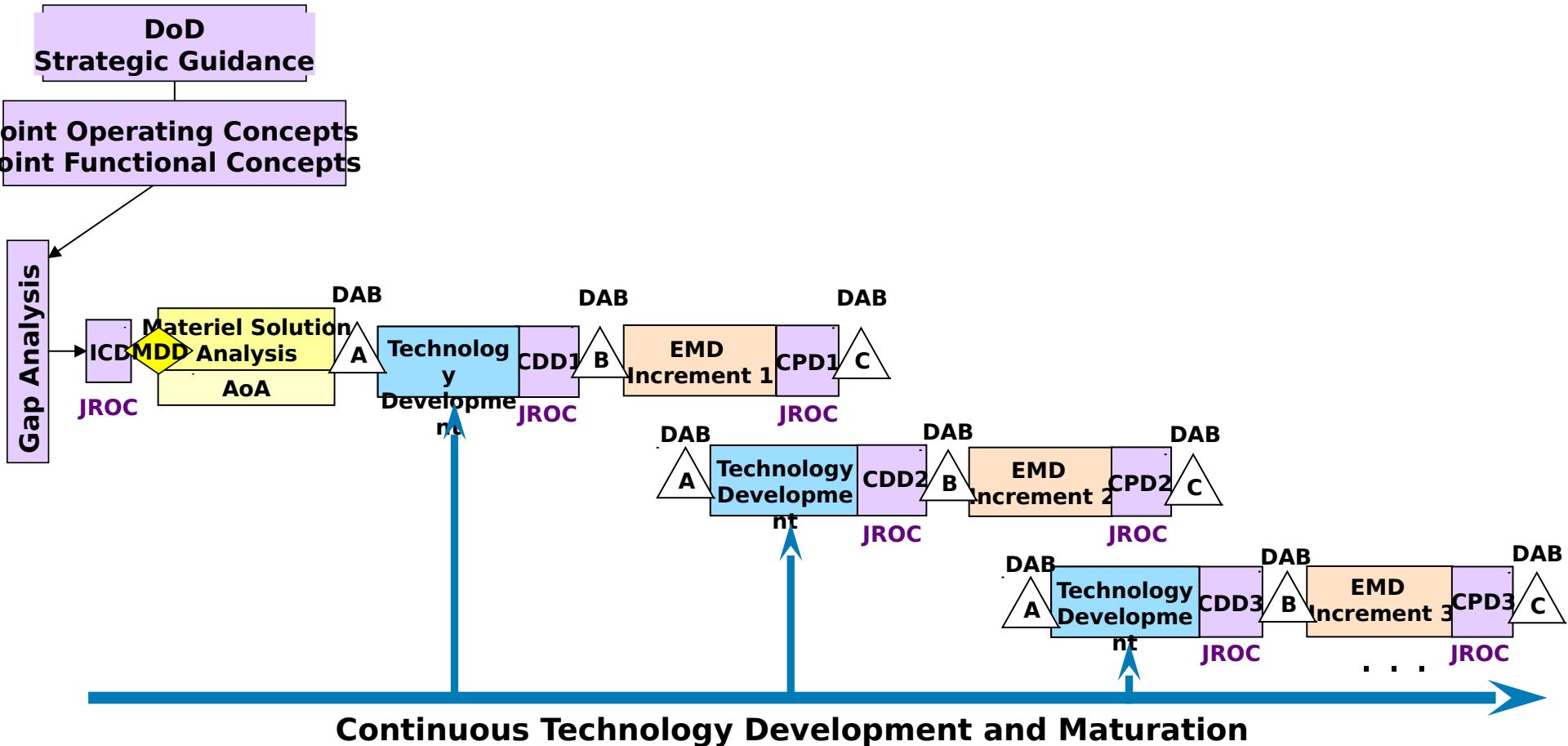


- *The Materiel Development Decision precedes entry into any phase of the acquisition framework*

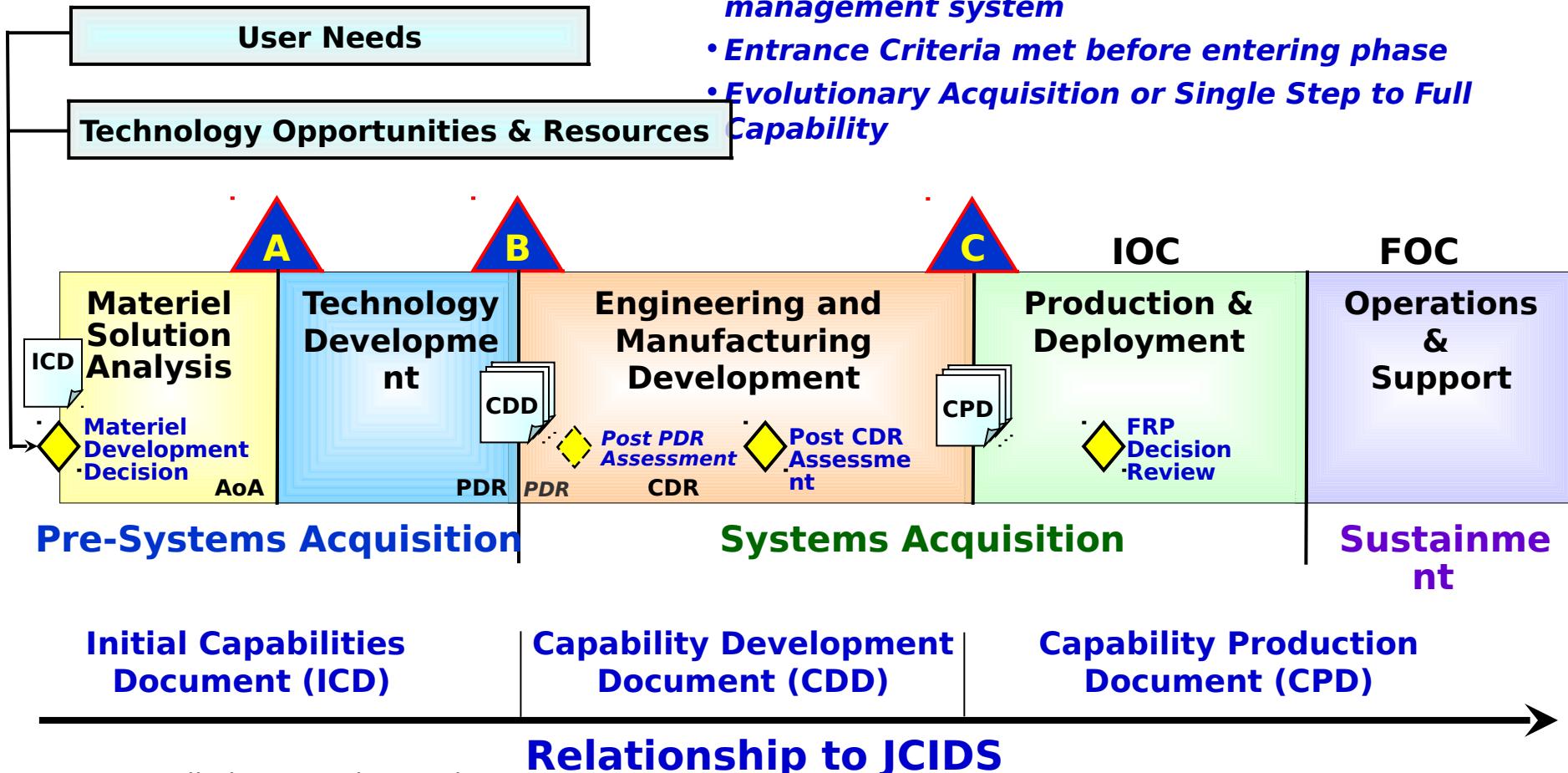
- Entrance criteria met before entering phases
- Evolutionary Acquisition or Single Step to Full Capability

- Decision points: 6
- Phases: 5
- Milestone documents: **40+**

Evolutionary Approach



The Defense Acquisition Management System



PDR: Preliminary Design Review

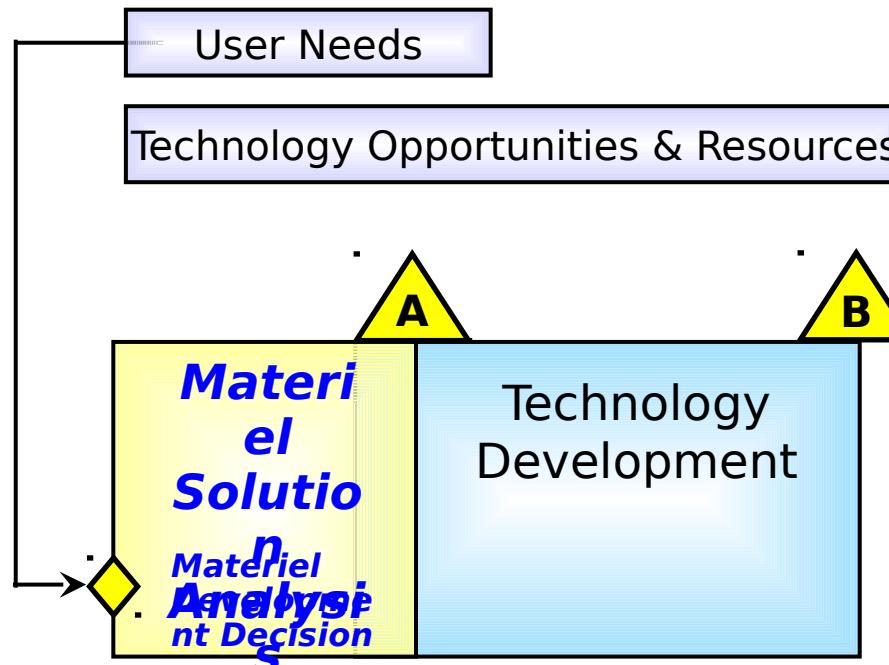
CDR: Critical Design Review

FRP: Full Rate Production

IOC: Initial Operational Capability

FOC: Full Operational Capability

Pre-Systems Acquisition



User Need

- JCIDS Capabilities-Based Assessment (CBA)
- Initial Capabilities Document (ICD)

Technology Opportunities

- ***All sources foreign & domestic***
- ***Small Business Innovation Research (SBIR) Program***
- ***Technology Projects: JCTDs, Coalition Warfare Program, Defense Acquisition Challenge Program, etc...***

New terms/requirements in *bold blue italics*...

MDA:

- **Approves AoA Study Guidance**
- **Determines acquisition phase of entry**
- **Identifies initial review milestone**
- Designates Lead DoD Component
- Approves Acquisition Decision Memorandum(ADM)

Regulatory Requirements

- Initial Capabilities Document (ICD)
- ***AoA Study Guidance (AoA Plan due immediately following the MDD)***

New terms/requirements in *bold blue italics*

Purpose:
**Assess
potential
materiel
solutions**



- **Enter:** Approved ICD and study guidance for conducting AoA.
- **Activities:** Conduct AoA, develop Technology Development Strategy (TDS) & ***draft CDD***
- **Guided by:** ICD and AoA Plan
- **Exit:** ***AoA completed, materiel solution options for the capability need identified in ICD have been recommended by lead Component conducting AoA***, and phase-specific entrance criteria for the initial review milestone have been satisfied

New terms/requirements in ***bold blue italics***

Milestone A

MDA approves:

- ***Materiel solution***
- Technology Development Strategy (TDS)
- Exit criteria for next phase
- ***Milestone A Certification (10 USC 2366a)***
- Acquisition Decision Memorandum (ADM)

Statutory & Regulatory Requirements

<ul style="list-style-type: none">• Acquisition Decision Memorandum (ADM)• Analysis of Alternatives (AoA)• Acquisition Information Assurance Strategy• Clinger-Cohen Act (CCA) Compliance• CIO Confirmation of CCA Compliance <i>(for MDAPs & MAIS, DoD CIO confirms)</i>• Consideration of Technology Issues• <i>Component Cost Estimate (CCE)</i>• Economic Analysis (MAIS)• Exit Criteria	<ul style="list-style-type: none">• Initial Capabilities Document (ICD)• <i>Item Unique Identification (IUID) Implementation Plan</i>• <i>Life Cycle Signature Support Plan</i>• Market Research• <i>MDA Program Certification</i>• Program Protection Plan (PPP)• <i>Systems Engineering Plan (SEP)</i>• Technology Development Strategy (TDS)• Test & Evaluation Strategy (TES)
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New terms/requirements in ***bold blue italics***

Technology Development

Purpose: Reduce Technology Risk, **determine and mature** appropriate set of **technologies to be integrated into a full system, and to demonstrate Critical Technology Elements on Prototypes.**



Enter: MDA **approved materiel solution** and TDS; **funding for TD phase activities**

Activities: **Competitive prototyping; Develop RAM strategy; conduct Preliminary Design Review (PDR); Post PDR Assessment at MS B**

Guided by: ICD & TDS **and supported by SE planning**

Exit: Affordable increment of military-useful capability identified; technology demonstrated in relevant environment; manufacturing risks identified; system or increment ready for production within short time frame (normally less than 5 years **for weapon systems**)

New terms/requirements in **bold blue italics**

Milestone B

MDA approves:

- Program Initiation (for most programs)
- Entry into ***EMD***
- Acquisition Strategy
- Acquisition Program Baseline
- LRIP quantities
- Exit criteria for next phase
- ***Type of Contract***
- ***Milestone B Certification (10 USC 2366b)***
- ADM

New terms/requirements in ***bold blue italics***

- **Purpose:** Develop a system or increment of capability, develop an affordable manufacturing process, **minimize logistics footprint**



- **Enter:** Mature Technology; Approved Requirements; Full Funding in FYDP

- **Activities:** *Define System of System Functionality & Interfaces*, Complete Detailed Design, **System-Level PDR (as needed for non-MDAP only)/CDR, Establish Product Baseline**,

- **Guided by:** CDD, **Acq Strategy, SEP & TEMP**

- **Exit:** *Complete System-Level CDR and Post-CDR Assessments*

- **Enter:** **Post-CDR Assessment and Establishment of initial Product Baseline**

- **Activities:** Developmental Testing (DT) Assesses Progress Against Technical Parameters, and Operational Assessments (OA) Against CDD

- **Guided by:** CDD, **Acq Strategy, SEP & TEMP**

- **Exit:** System Demonstrated in Intended Environment using **production-representative articles; Manufacturing Processes Demonstrated**: Meets Exit Criteria and

Milestone B: Statutory and

All programs except where noted (see Encl 4, DoDI 5000.02)

- Acquisition Decision Memorandum (ADM)
- Analysis of Alternatives (AoA) (update)
- Acquisition Strategy
- Affordability Assessment
- Acquisition Program Baseline
- Acquisition Information Assurance Strategy
- **Alternate Live Fire T&E Plan**
- Benefit Analysis & Determination
- Capability Development Document (CDD)
- Clinger-Cohen Act (CCA) Compliance
- CIO Confirmation of CCA Compliance *(for MDAPs & MAIS, DoD CIO confirms)*
- Consideration of Technology Issues (ACAT I & II)
- Competition Analysis
- **Component Cost Estimate (CCE) (MAIS)**
- Cooperative Opportunities
- Core Logistics Analysis/Source of Repair Analysis
- Cost Analysis Requirements Description (CARD) (MDAP & MAIS)
- **Corrosion Prevention Control Plan**
- **Data Management Strategy (in acquisition strategy)**
- Economic Analysis (MAIS)
- Exit Criteria
- Initial Capabilities Document (ICD)
- Independent Cost Estimate (ACAT I)
- Independent Technology Readiness

New terms/requirements in **bold blue italics**

- Information Support Plan (ISP)
- Industrial Base Capabilities (MDAP)
- **Item Unique Identification Impl Plan (SEP annex)**
- Live Fire T&E Waiver
- Life Cycle Sustainment Plan (LCSP)
- **Life Cycle Signature Support Plan**
- LRIP Quantities (ACAT I & II)
- Manpower Estimate (MDAP)
- Market Research
- **MDA Program Certification**
- **MDA Assessment of compliance with Chemical, Biological, Radiological, and Nuclear Survivability Requirements (Not in Encl 4)**
- Net-Centric Data Strategy (in ISP)
- Operational Test Agency OT&E Report
- **Preliminary Design Review Report**
- Program Protection Plan (PPP)
- Programmatic Environment, Safety, & Occupational Health Evaluation (PESHE)
- **Replaced System Sustainment Plan (MDAP)**
- Selected Acquisition Report (SAR) (MDAP)
- Spectrum Supportability Determination
- **Systems Engineering Plan (SEP)**
- **System Threat Assessment Report (STAR)(ACAT I)**
- System Threat Assessment (ACAT II)
- Technology Readiness Assessment (TRA)

MDA Approves:

- **Updated Acquisition Strategy and Acquisition Program Baseline**
- **Entry into LRIP for systems that require a LRIP, into production or procurement for systems that do not require LRIP, or into limited deployment for MAIS programs or software intensive systems with no production components**
- **Exit criteria for LRIP if appropriate**
- **Acquisition Decision Memorandum**

Purpose: Achieve an operational Capability that satisfies mission needs



Production & Deployment

LRIP/IOT&E

FRP
Decision
Review

Full-Rate Production & Deployment

- **Enter:** Acceptable performance in DT & OA; mature software; no significant manufacturing risks; approved CPD; **refined integrated architecture**; acceptable interoperability and operational supportability; demonstration of affordability; fully funded; phased for rapid deployment.
- **Activities:** IOT&E, LFT&E and Interoperability Testing of Production or Production-Representative Articles; **IOC possible**
- **Guided by:** CPD, TEMP
- **Exit:** System Operationally Effective, Suitable and Ready for Full-Rate Production

- **Enter:** Beyond LRIP & LFT&E Reports (OSD T&E/LFT&E programs) Submitted to Congress
- **Activities:** Full-Rate Production; Fielding and Support of Fielded Systems; IOC/FOC
- **Guided by:** Acq Strategy & Life Cycle Sustainment Plan
- **Exit:** Full Operational Capability; Deployment Complete

- Acquisition Decision Memorandum (ADM)
- Analysis of Alternatives (AoA) (update)
- Acquisition Strategy
- Affordability Assessment
- Acquisition Program Baseline
- Acquisition Information Assurance Strategy
- Benefit Analysis & Determination
- Capability Production Document (CPD)
- Title 40/Clinger-Cohen Act (CCA) Compliance
- CIO Confirmation of CCA Compliance **(for MDAPs & MAIS, DoD CIO confirms)**
- Consideration of Technology Issues (ACAT I & II)
- Competition Analysis
- Component Cost Estimate (CCE)**
- Cooperative Opportunities
- Core Logistics Analysis/Source of Repair Analysis
- Cost Analysis Requirements Description (CARD) (MDAP & MAIS)
- Corrosion Prevention Control Plan**
- Data Management Strategy (in acquisition strategy)**
- Exit Criteria
- Initial Capabilities Document (ICD) (if program initiation)

New terms/requirements

Independent Cost Estimate (ACAT I)

- Independent Technology Readiness Assessment (TRA) (ACAT ID)
- Information Support Plan (ISP)
- Industrial Base Capabilities (MDAP)
- Item Unique Identification Plan (SEP annex)**
- Life Cycle Sustainment Plan (LCSP)
- Life Cycle Signature Support Plan**
- Manpower Estimate (MDAP)
- MDA Program Certification (if program initiation)
- Military equipment valuation (in acquisition strategy)**
- Net-Centric Data Strategy (in ISP)
- Operational Test Agency OT&E Report
- Program Protection Plan (PPP)
- Programmatic Environment, Safety, & Occupational Health Evaluation (PESHE)
- Selected Acquisition Report (SAR) MDAP (if rebaselined)
- Spectrum Supportability Determination
- Systems Engineering Plan (SEP)**
- System Threat Assessment Report (STAR) (ACAT I)**
- System Threat Assessment (ACAT II)
- Technology Readiness Assessment (TRA)

Test & Evaluation Master Plan (TEMP)

Full Rate Production Decision Review (FRPDR)

MDA Approves:

- **Full-rate production**
- **Updated Acquisition Strategy**
- **Updated Acquisition Program Baseline**
- **Exit criteria, if appropriate**
- **Provisions for evaluation for post-deployment performance**
- **Acquisition Decision Memorandum (ADM)**

FRPDR Statutory and Regulatory Requirements

<ul style="list-style-type: none"> • Acquisition Decision Memorandum (ADM) • Analysis of Alternatives (AoA) (AIS only) • Acquisition Strategy • Acquisition Program Baseline • Acquisition Information Assurance Strategy • Beyond LRIP Report (DOT&E T&E Oversight Programs) • Clinger-Cohen Act (CCA) Compliance • Confirmation of CCA Compliance (for MDAPs & MAIS, DoD CIO confirms) • Component Cost Estimate (CCE) • Cost Analysis Requirements Description (CARD) (MDAP & MAIS) • Data Management Strategy (part of Acq Strategy) • Economic Analysis 	<ul style="list-style-type: none"> • Exit Criteria • IT and NSS Joint Interoperability Test Certification (all IT incl NSS) • IOT&E Completed ACAT I and II (conventional weapons systems for use in combat) • Independent Cost Estimate (ACAT I) (if MDA requests) • Life Cycle Sustainment Plan (LCSP) • Live Fire T&E Report (OSD LFT&E Programs) • Manpower Estimate (MDAP) • Military Equipment Valuation (part of Acq Strategy) • Operational Test Agency OT&E Report • Post Implementation Review • Programmatic Environment, Safety, & Occupational Health Evaluation (PESHE) • Test & Evaluation Master Plan (TEMP)
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For AIS systems, FRPDR is the Full Deployment Decision Review

New terms/requirements in ***bold blue italics***

Operations & Support

Purpose: Execute a support program that meets materiel readiness and operational support performance requirements, and sustains the system in the most cost-effective manner over its total life cycle.

FOC



- **Entrance:** Approved CPD; *approved LCSP; successful FRP Decision*
- **Activities:** *Performance-Based Life-Cycle Product Support (PBL)* planning, development, implementation, and management; initiate system modifications as necessary; continuing reviews of sustainment strategies
- **Guided by:** Acquisition Strategy/LCSP
- **Activities:** Demilitarize and Dispose of Systems IAW Legal and Regulatory Requirements, Particularly Environmental Considerations and Explosives Safety
- **Guided by:** Programmatic Environment, Safety, and Occupational Health Evaluation (PESHE)

New terms/requirements in ***bold blue italics***

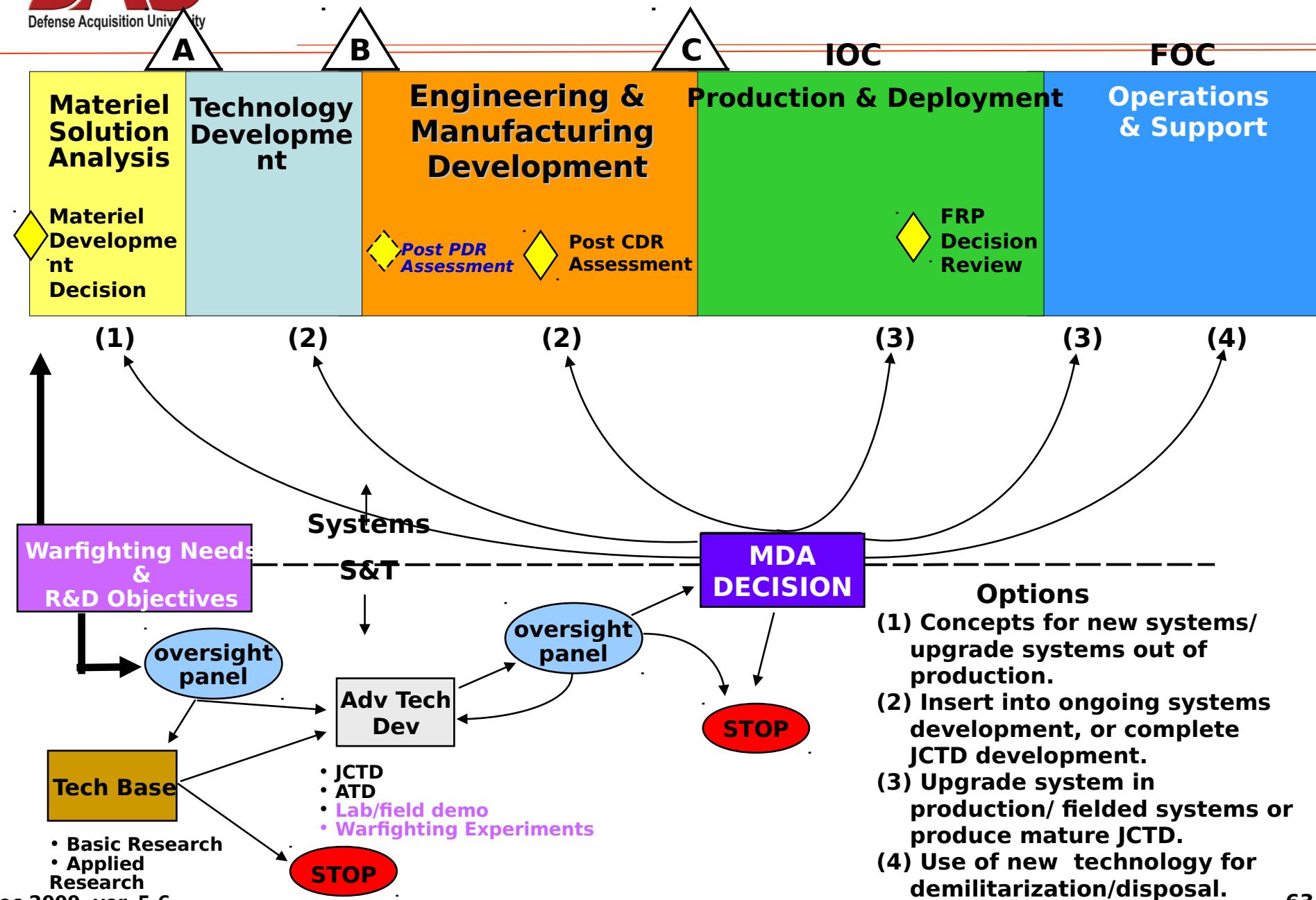
The Acquisition Warrior

Questions?

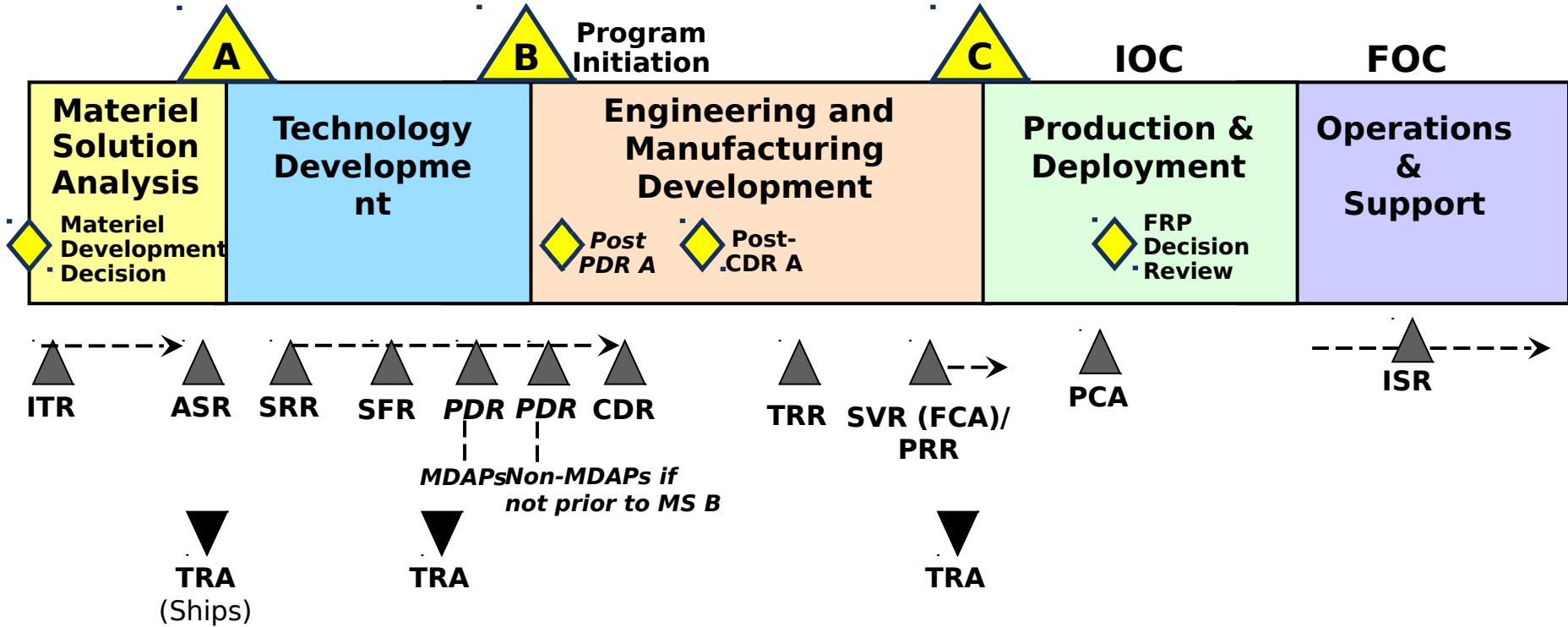


Backups

S&T Linkage to the Acquisition Management



Systems Engineering Technical Reviews



- Initial Technical Review (ITR)
- Alternative Systems Review (ASR)
- Systems Requirements Review (SRR)
- System Functional Review (SFR)
- Preliminary Design Review (PDR)
- Critical Design Review (CDR)
- Post-PDR Assessment (Post-PDRA)

- Post-CDR Assessment (PCDRA)
- Test Readiness Review (TRR)
- System Verification Review (SVR)
- Functional Configuration Audit (FCA)
- Production Readiness Review (PDR)
- Operational Test Readiness Review (OTRR)
- Physical Configuration Audit (PCA)

- Technology Readiness Assessment (TRA)
- In-Service Review (ISR)

Technology and Manufacturing Readiness

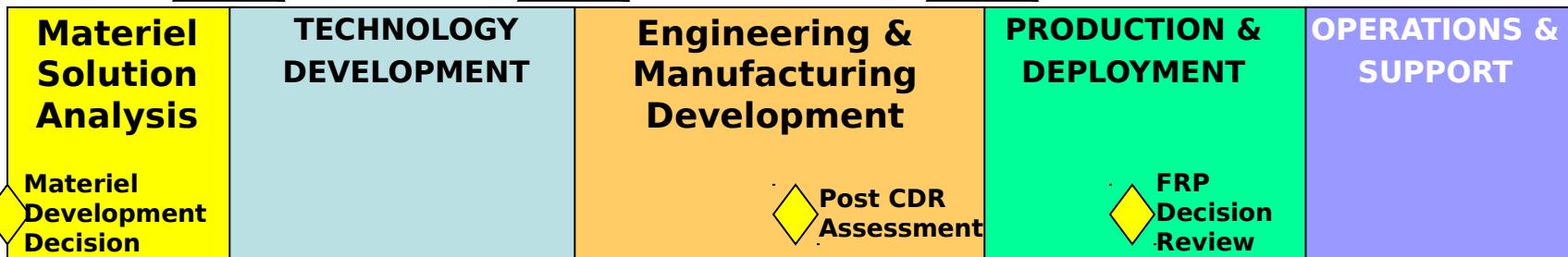

A

B

C

IOC

FOC



TRLs 1-3	TRL 4	TRL 5	TRL 6	TRL 7	TRL 8	TRL 9	Technology Readiness Levels Defense Acquisition Guidebook para. 10.5.2
Analytical/ Experimental Critical Function/ Characteristic Proof of Concept	Component And/or Breadboard Validation In a Laboratory Environment	Component And/or Breadboard Validation In a Relevant Environment	System/ Subsystem Model or Prototype Demonstrate d In a Relevant Environment	System Prototype Demonstrate d In an Operational Environment	Actual System Completed Qualified Through Test and Demonstration	Actual System "Mission Proven" Through Successful Operations	
MRLs 1-3	MRL 4	MRL 5	MRL 6	MRL 7	MRL 8	MRL 9	Manufacturing Readiness Levels Draft MRA Deskbook May 2008
Manufacturing Feasibility Assessed. Concepts defined/ developed	Capability to produce Technology In Lab Environment. Manufacturing Risks Identified	Capability to Produce Prototype Components	Capability to Produce System/ Subsystem Prototypes	Capability to Produce Systems, Subsystems Or Components in a Production Representative Environment	Pilot Line Capability Demonstrated. Ready for LRIP	Low Rate Production Demonstrated. Capability In Place for FRP	Full Rate Production Demonstrated. Lean Production Practices In Place
	Manufacturing Cost Drivers Identified	Cost Model Constructed	Detailed Cost Analysis Complete	Cost Model Updated To System Level Unit Cost Reduction Efforts Underway	Engineering Cost Model Validated	LRIP Cost Goals Met Learning Curve Validated	FRP Unit Cost Goals Met

Section 2366b of Title 10, United States Code, requires certification that: the **technology** in the program has been demonstrated in a **relevant** environment to enter Milestone B. [TRL 6]

Implementation of WSARA Program Certifications IAW 10 USC 2366a and 2366b

Following statements must be added to the ADM:

MS A: “I have reviewed the program and have made the certifications required by Section 2366a of Title 10, United States Code. At any time prior to Milestone B approval, the Program Manager shall notify me immediately if the projected cost of the program exceeds the cost estimate for the program at the time of Milestone A certification by at least 25 percent or the PM determines that the period of time required for the delivery of an initial operational capability is likely to exceed the schedule objective provided at the time of Milestone A certification by more than 25 percent.”

MS B: “I have reviewed the program and the business case analysis and have made the certifications required, or executed a waiver of the applicability of one or more of the components of the certification requirement as authorized by Section 2366b of Title 10, United States Code. The Program Manager shall notify me immediately of any changes to the program that alter the substantive basis for the certification.”

Implementation of WSARA Program Certification for MS A (10 USC 2366a)

MEMORANDUM FOR THE RECORD

SUBJECT: Milestone A Program Certification

As required by Section 2366a of Title 10, United States Code, I have consulted with the Joint Requirements Oversight Council (JROC) on matters related to program requirements and military needs for the *(name of program)* and certify that:

- (1) the program fulfills an approved initial capabilities document;
- (2) the program is being executed by an entity with a relevant core competency as identified by the Secretary of Defense;
- (3) ***an analysis of alternatives has been performed consistent with the study guidance developed by the Director of Cost Assessment and Program Evaluation;***
- (4) a cost estimate for the program has been submitted, ***with the concurrence of the Director of Cost Assessment and Program Evaluation***, and the level of resources required to develop and procure the program is consistent with the priority level assigned by the JROC; and,
- (5) [include only if the system duplicates a capability already provided by an existing system] the duplication of capability

Implementation of WSARA Program Certification for MS B (10)

MEMORANDUM FOR THE RECORD **USC 2366b**)

SUBJECT: Milestone B Program Certification

As required by Section 2366b of Title 10, United States Code,

(1) I have received a business case analysis for the (*name of program*) and certify on the basis of the analysis that:

(A) the program is affordable when considering the ability of the Department of Defense to accomplish the program's mission using alternative systems;

(B) **appropriate trade-offs among cost, schedule, and performance objectives have been made to ensure that** the program is affordable when considering the per unit cost and the total acquisition cost in the context of the total resources available during the period covered by the future-years defense program submitted during the fiscal year in which the certification is made;

(C) reasonable cost and schedule estimates have been developed to execute, **with the concurrence of the Director of Cost Assessment and Program Evaluation**, the product development and production plan under the program;

(D) funding is available to execute the product development and production plan under the program, through the period covered by the future-years defense program submitted during the fiscal year in which the certification is made, consistent with the estimates described in paragraph (C) for the program; and

Changes highlighted in **bold blue**

Implementation of WSARA Program Certification for MS B (10 USC 2366b), continued..

(3) I further certify that:

- (A) appropriate market research has been conducted prior to technology development to reduce duplication of existing technology and products;
- (B) the Department of Defense has completed an analysis of alternatives with respect to the program;
- (C) the Joint Requirements Oversight Council has accomplished its duties with respect to the program pursuant to section 181(b) of Title 10, including an analysis of the operational requirements for the program;
- (D) the technology in the program has been demonstrated in a relevant environment, ***as determined by the Milestone Decision Authority on the basis of an independent review and assessment by the Director of Defense Research and Engineering; and***
- (E) the program complies with all relevant policies, regulations, and directives of the Department of Defense.

Changes highlighted in ***bold blue
italics***

Cost Estimate at Milestone A

- **Milestone A cost estimate conducted by Component Cost Center**
- **Component Cost Estimate (CCE), must include both development and procurement costs (not just cost of TD Phase)**
- **The Milestone Decision Authority Certification at Milestone A will be based on the DoD Component estimate**
 - **The Program Manager's report of a 25% increase will be based on the same estimate**

Source: 10 USC
2366a and DAG
Chapter 3

- **Survivability KPP.** Mandatory for manned systems and systems designed to enhance personnel survivability in an asymmetric threat environment – KPPs that contribute to survivability (speed, maneuverability, detectability, and countermeasures)
- **Force Protection KPP.** Mandatory for manned systems and systems designed to enhance personnel survivability in an asymmetric threat environment – KPPs that contribute to protection of personnel (prevent or mitigate hostile actions against personnel)
- **Sustainment (three factors)**
 - 1) **Availability KPP.** Mandatory for ACAT I; sponsor decision for ACAT II/III. Two components:
 - **Materiel Availability:** measure of percentage of total inventory of a system ready for mission tasking. Developed by PM.
 - **Operational Availability:** percentage of time a system or group of systems within a unit are capable of performing assigned mission. Developed by Requirements Manager
 - 2) **Reliability KSA.** Mandatory – probability that system will perform without failure over a specified interval. Developed by Requirements Manager
 - 3) **Ownership Cost KSA.** Mandatory – unit operations, energy (POL, fuel – fully burdened cost, maintenance, sustaining support). Developed by PM
- **Net-Ready KPP** – required for all IT and NSS used to enter, process, store, display, or transmit information. (except systems that do not communicate with external sources)
- **KPPs traceable to ICD capability definitions and to Joint Pub 3.0**
 - required for systems with a primary mission or other attributes that contribute to one or more of the capabilities described in the ICD or the joint functions.

Sponsor analysis will determine whether to adopt these parameters as KPPs. If not adopted, summary of justification for not adopting must be provided in the CDD.

- **System Training KPP** – system training addressed in the AoA and subsequent acquisition phases; training requirements and costs are addressed across the program life cycle
- **Energy Efficiency KPP** – Include fuel efficiency considerations in systems consistent with future force plans and approved planning scenarios. Set targets and thresholds for the fuel efficiency of materiel solutions.

Chemical, Biological, Radiological, & Nuclear (CBRN) KPPs

JCIDS Manual & DoDI 3150.09

- **Nuclear Survivability KPPs** – Mandatory (including EMP hardening) for systems covered under DoDD S-5210.81, *United States Nuclear Weapons Command, Control, Safety and Security*.
- **CBRN Attributes** – For CBRN mission-critical systems, CBRN survivability performance attribute(s) will be evaluated to determine KPP or KSA designation (may be combined w/survivability, force protection or Net-Ready).

Implementation of WSARA Critical Cost Growth (1)

DTM contains policy implementing new 10 USC 2433a, Critical Cost Growth of MDAPs, that amends 10 USC 2433, Unit Cost Reports, and supersedes all previous USD(AT&L) policies addressing actions that must be taken following critical cost growth of a MDAP or designated subprogram

- **PM shall notify the CAE immediately, whenever there is a reasonable cause to believe that the current estimate of either the program acquisition unit cost (PAUC) or average procurement unit cost (APUC) of a MDAP or designated subprogram (in base-year dollars) has increased by 25 percent (or more) over the PAUC or APUC objective of the currently approved APB estimate, or 50 percent (or more) over the PAUC or APUC of the original APB estimate.**
- **If the CAE determines that there is an increase in the current estimate of the PAUC or APUC of at least 25 percent over the PAUC or APUC objective of the currently**

Implementation of WSARA

Critical Cost Growth (2)

- **If the Component Head subsequently determines that there is, in fact, an increase in the current estimate of the PAUC or APUC of at least 25 percent over the currently approved APB, or 50 percent over the PAUC or APUC of the original APB, the Head of the DoD Component shall notify Congress, in writing, of the determination of critical cost growth and the increase with respect to the program or subprogram concerned.**
- **The notification shall be not later than 45 days after the end of the quarter, in the case of a quarterly report; or not later than 45 days after the date of the report, in the case of an out-of-cycle report based on critical change occurring between quarters. In either case, notification shall include the date that the Head of the DoD Component made the determination.**
- **In addition, the Component Head shall submit an SAR for either the fiscal year quarter ending on or after the determination date, or for the fiscal year quarter that immediately precedes the fiscal year quarter ending on**

Implementation of WSARA

Critical Cost Growth (3)

- The USD(AT&L), after consultation with the JROC, shall determine the root cause or causes of the critical cost growth in accordance with applicable statutory requirements and DoD policies, procedures, and guidance based upon the root cause analysis conducted by the senior official for PARCA; and in consultation with the DCAPE, shall carry out an assessment of:
 - a. The projected cost of completing the program if current requirements are not modified.
 - b. The projected cost of completing the program based on reasonable modification of such requirements.
 - c. The rough order of magnitude of the costs of any reasonable alternative system or capability.
 - d. The need to reduce funding for other programs due to the growth in cost of the program.

Implementation of WSARA

Critical Cost Growth (4)

- After conducting the reassessment, the USD(AT&L) shall terminate the program unless the USD(AT&L) submits a written certification to Congress before the end of the 60-day period beginning on the day the SAR containing the unit cost information is required to be submitted to Congress. The certification must state:
 - a. The continuation of the program is essential to the national security.
 - b. There are no alternatives to the program that will provide acceptable capability to meet the joint military requirement (as defined in section 181(g)(1) of Title 10, U.S.C) at less cost.
 - c. The new estimates of the PAVC or APUC have been determined by the DCAPE, to be reasonable.
 - d. The program is a higher priority than programs whose funding must be reduced to accommodate the growth in cost of the program.

Implementation of WSARA

Critical Cost Growth (5)

- The written certification shall be accompanied by a report presenting the root cause analysis and assessment and basis for each determination made in accordance with the five certification criteria listed previously
- If the USD(AT&L) elects NOT to terminate a MDAP that has experienced critical cost growth, the Secretary of Defense shall:
 - a. Restructure the program in a manner that addresses the root cause or causes of the critical cost growth, and ensures that the program has an appropriate management structure as set forth in the written certification;
 - b. Rescind the most recent milestone approval for the program or designated subprograms and withdraw any associated certification(s) pursuant to section 2366a or 2366b.
 - c. Require a new milestone approval for the program or designated subprograms before taking any contract action to enter a new contract, exercise an option under an existing contract, or otherwise extend the scope of an existing contract under the program, except to the extent determined necessary by the MDA, on a non-delegable basis, to ensure that the program can be restructured as intended by the Secretary of Defense without unnecessarily wasting resources.

Implementation of WSARA

Critical Cost Growth (6)

- Additionally, for each MDAP that has exceeded the critical cost thresholds, but has not been terminated, the senior official for PARCA shall conduct semi-annual reviews until 1 year after the date a new milestone approval is received. The senior official for PARCA, shall report the results of the semi-annual reviews to the USD(AT&L) and summarize the results in the Director's next annual report.
- If a MDAP is terminated after experiencing a critical cost breach, the USD(AT&L) shall submit to Congress a written report with the following information:
 - a. An explanation of the reasons for terminating the program.
 - b. The alternatives considered to address any problems in the program.
 - c. The course the Department of Defense plans to pursue to meet any continuing joint military requirements otherwise intended to be met by the program.

Implementation of WSARA

Revised MDAP Definition

A MDAP is a Department of Defense acquisition program that is not a highly sensitive classified program and:

- a. that is designated by the USD (AT&L) as an MDAP; or**
- b. that is estimated to require an eventual total expenditure for research, development, test, and evaluation, *including all planned increments**, of more than \$365M (based on fiscal year 2000 constant dollars) or an eventual total**

*Change to definition highlighted in blue italics

Policy Impact: The revised definition may result in a change in MDA expenditure for procurement, *including all planned increments, of more than**